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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/408,965	09/29/1999	DAVID A. WRIGHT	22-0056	4681

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EXAMINER

DO, NHAT Q

ART UNIT	PAPER NUMBER
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2663

DATE MAILED: 11/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/408,965

Applicant(s)

WRIGHT ET AL.

Examiner

Nhat Do

ND

Art Unit

2663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11, 14-35, 37 and 40-55 is/are rejected.
- 7) ☒ Claim(s) 10, 12, 13, 36, 38, and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The indicated allowability of claims 1-9, 11, 14-35, 37 and 40-55 is withdrawn because after reviewing the claims and cited references, Examiner recognizes the references still read on the claimed invention.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,659,545 to Sowles et al in view of U.S. Patent No. 5,802,044 to Baum et al.

Regarding to claims 54, and 55, Sowles et al disclose a system comprising:

The earth terminal (subscriber unit) transmits a synchronization burst to the satellite (Col. 10, lines 44-50);

The satellite measures the timing and frequency offset of the burst and transmits a report to the subscriber unit (Col. 10, lines 52-65). It is inherent that the satellite receives the burst prior to measuring timing and frequency offset.

Sowles et al disclose the satellite determines whether the burst is on-time (OK) or not, but fail to disclose the satellite determines whether the burst is late or early and reports to the earth terminal a code representing whether the burst is late or early. The drawback is ambiguous because the earth terminal (subscriber unit) does not know whether it should retard or advance its timing reference.

Art Unit: 2663

Baum et al disclose a system wherein the control station determines whether the synchronization burst transmitted by a subscriber unit is late or early and transmits a code representing whether the burst is late or early (Col. 16, lines 10-25).

In order to avoid the situation when the earth terminal of Sowles et al advances its reference while the burst comes to the satellite early (or vice versa), it would have been obvious to a person having ordinary skill in the art by the time the invention was made to modify the satellite of Sowles et al so that it not only determines whether the burst is on time but late or early as well; and reports a code representing whether the burst is on time, late, or early as suggested by Baum et al.

Regarding to claim 53, further to the rejection of claim 1, Sowles et al disclose the earth terminal adjusts its transmit time over a range from 2.3 to 11 milliseconds (Col. 11, lines 35-40). Therefore, it is inherent that there is a timer means (downlink symbol counter) for controlling the transmit-time adjustment.

3. Claims 1, 2, 18-28, and 44-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sowles et al and Baum et al as applied to claim 53 above, and further in view of U.S. Patent No. 4,577,316 to Schiff.

Regarding to claim 1,

Step (b) is considered equivalent to the step of the satellite measures the timing and frequency offset of the burst, which described in the rejection of claim 1;

Steps (d) to (f) are rejected in the rejection of claim 53.

Sowles et al fail to disclose steps (a), and (c), which are: maintaining a downlink symbol counter clocked at a downlink clock rate (step (a)); and adjusting the downlink symbol counter to correspond to the downlink symbol count.

Schiff disclose a system performing: maintaining a downlink symbol count (timing register 220) clocked at 60M (Col. 7, lines 9-25), which is the rate of downlink clock (Col. 5, lines 30-31); and adjusting the downlink symbol count (timing register 220) to correspond to the error of the arrival time of the synchronization burst (Col. 7, line 42-col. 8, line 8), which is considered equivalent to claimed downlink symbol count.

It would have been obvious to a person having ordinary skill in the art by the time the invention was made to modify the earth terminal of Sowles et al so that it maintains a downlink symbol count clocked at downlink clock; and adjusting the downlink symbol count to correspond to the error of the arrival time of the synchronization burst. A skilled artisan would have been motivated to so in order to control the step of adjusting transmit time over a range from 2.3 to 11 milliseconds (Col. 11, lines 35-40).

Regarding to claim 27, since the method disclosed by Sowles et al is applied between a satellite and an earth terminal (Col. 1, lines 25-30), it is inherent process comprises:

Establishing a communication satellite in orbit;

Establishing an earth terminal in communication with the satellite.

Since Schiff discloses the step of maintaining downlink symbol count comprising:

Generating a master clock on the satellite

Transmitting downlink symbols synchronous with the master clock (Col. 5, lines 20-40).

Art Unit: 2663

Therefore the method disclosed by Sowles et al modified by Baum et al and Schiff also comprises these steps.

Regarding to claims 2, and 28, since Schiff discloses the step of maintaining downlink symbol count (timing register 220) comprising extracting downlink symbol count clock from downlink signal (Col. 5, lines 20-40), therefore the method disclosed by Sowles et al modified by Baum et al and Schiff also comprises this step.

Regarding to claims 18, and 44, Sowles et al disclose determining an identification of the earth station (Col. 9, lines 54-56);

Transmitting the identification of the earth terminal to a network control center (Col. 9, lines 42-63).

Regarding to claims 19, and 45, the claimed step is equivalent to rejected step (c) of claim 1.

Regarding to claims 20, and 46, the claimed steps are equivalent to the rejected steps (d) to (f) of claim 1.

Regarding to claims 21, and 47, the claimed step is equivalent to rejected step (c) of claim 1.

Regarding to claims 22, and 48, the claimed step is equivalent to the last rejected limitation of claim 55.

Regarding to claims 23, 24, 49, and 50, further to the rejection of claim 54, since the code indicates on time, late, or early, it is inherent that the code is a multi-bit code (more than one bit) in order to indicate three different cases.

Art Unit: 2663

Regarding to claims 25, and 51, it is inherent that the timing error is stored for further process.

4. Claims 3-9, 11, 14-17, 26, 29-35, 37, 40-43, and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sowles et al, Baum et al, and Schiff as applied to claims 2, and 28 above, and further in view of U.S. Patent No. 5,867,489 to Hershey et al.

Regarding to claims 3, 4, 29 and 30, Sowles et al fail to disclose determining an initial estimation of length L of a propagation path between the satellite and the earth terminal.

Hershey et al disclose synchronization method comprising determining an initial estimation of length L of a propagation path between the satellite and the earth terminal (Col. 7, lines 3-21). Therefore, it would have been obvious to a person having ordinary skill in the art by the time the invention was made to modify the synchronization procedure of Sowles et al so that it also determines a length L of a propagation path between the satellite and the earth terminal. A skilled artisan would have been motivated to do so in order to minimize the guard band as taught by Hershey et al (Col. 2, lines 5-10).

Regarding to claims 5, 16, 31, and 42, Hershey et al disclose storing the earth terminal position in the earth station; and providing position of the satellite to the earth terminal (Col. 7, lines 3-15).

Regarding to claims 6, and 32, Hershey et al disclose the earth terminal receives the satellite position transmitted from the master station (Col. 8, lines 15-28).

Regarding to claims 7-9, 15, 33-35, and 41, Hershey et al fail to disclose updating periodically the steps of claims 4-6. However, Hershey et al disclose the satellite moves relative to the earth station (Col. 2, lines 2-4). Therefore, it would have been obvious to a person having

Art Unit: 2663

ordinary skill in the art by the time the invention was made to update periodically the steps of claims 4-6 respectively. A skilled artisan would have been motivated to so in order to obtain better synchronization.

Regarding to claims 11, and 37, it is downlink symbol counter combined by Sowles et al, Baum et al, Schiff, and Hershey et al adjusts upon the change of the length L.

Regarding to claims 14, and 40, Sowles et al disclose transmitting communication signal from the earth station to the satellite (Col. 11, lines 45-54);

Receiving a timing error from the satellite (Col. 14, lines 9-13).

Regarding to claims 17, and 43, the limitation "transmitting an entry order wire" is assumed 'transmitting a signal in a signaling channel'. Then, Sowles et al disclose transmitting an entry order wire from the earth terminal to the satellite (Col. 9, line 45-47).

Regarding to claims 26, and 52, based on the combination of Sowles et al, Baum et al, and Hershey et al, the downlink symbol counter is adjusted whenever error occurs; therefore, the downlink symbol counter is adjusted upon re-entry of the earth station when error detected.

Allowable Subject Matter

5. Claims 10, 12, 13, 36, 38, and 39 are allowed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhat Do whose telephone number is (703) 305-5743. The examiner can normally be reached on 8:30 AM - 5:30 PM Monday - Friday.

Art Unit: 2663

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Nhat Do
Examiner
Art Unit 2663

ND

October 27, 2003.



MELVIN MARCELO
PRIMARY EXAMINER